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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/915,765	07/27/2001	Heinrich Walter	225MU/50233	7471

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CROWELL & MORING, L.L.P.  
P.O. Box 14300  
Washington, DC 20044-4300

EXAMINER
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MEEKS, TIMOTHY HOWARD

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 07/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/915,765

Applicant(s)

WALTER, HEINRICH

Examiner

Timothy H Meeks

Art Unit

1762

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 6-17 is/are pending in the application.
- 4a) Of the above claim(s) 10-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 6-9 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-4 and 6-17 are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Application Status***

The amendment filed on 5/19/04 in response to the Office Action mailed on 12/8/03 has been fully considered. Claims 10-17 remain withdrawn from further consideration as being directed to a nonelected invention. Claim 5 was canceled. Claims 1-4 and 6-9 remain under consideration.

### ***Claim Objections***

Claims 1 and 4 are objected to because of the following informalities: In claim 1, line 5, it appears that the word "gas" after the word "coating" has been omitted. It is noted that this word was present in the previous version of the claim. In claim 4, "1200\_C" should be "1200 °C". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 and 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2328219 (GB '219) in view of Benden et al. (4,148,275).

GB '219 discloses a method for applying a chromium diffusion coating to a component, such as a turbine blade, comprising providing a mixture of chromium

granules and an activator in a chamber having an inert gas atmosphere along with the components to be coated, heating the mixture to form a gaseous coating mixture including chromium chloride, and exposing the entire surface of the article to the gas mixture to form a chromium diffusion coating thereon (pages 4-5, 8, 10, 12, and example 1).

GB '219 does not explicitly disclose a hollow turbine blade or coating internal surfaces thereof. However, because Benden et al. disclose at col. 2, lines 1-8 that it is desirable to coat internal passages of turbine blades such as cooling holes with a chromium coating to provide oxidation and/or corrosion resistance, it would have been obvious to coat turbine blades having internal cooling holes in the GB '219 process so as to provide a chromium diffusion coating to such internal surfaces and provide corrosion and/or oxidation protection to those surfaces. One of ordinary skill in the art would have a reasonable expectation that the GB '219 process would provide chromium coatings to such internal surfaces as it is conducted in a flowing gas atmosphere, GB '219 discloses that the coatings are provided to the **entire** surface of the component and the gas would flow into the cooling holes as the thermal convection of GB '219 would act to force the gas into the internal portions of the article as well. At least some automatic dissipation of the coating gas from some points above the component pictured in Figure 1 of GB '219 would occur automatically due to gravity. Although other forces may be in effect, gravity is also a force affecting flow of the gas.

With respect to claims 2 and 3, the mixture used in example 1 is composed of 99% chromium granules and 1% ammonium chloride activator. With respect to claim 4,

the mixture is heated to 1140 C which is "approximately 1200 C". Thickness of the coating in the example is 70 microns. The chromium amount of example 1 is above the range of claim 9, however, since the chromium coating provides oxidation and/or corrosion resistance, the amount of chromium in the coating clearly affects the ability of the coating to do so. Therefore, to adjust this result effective variable to values in the claimed through routine experimentation for optimization would have been obvious.

### ***Response to Arguments***

Applicant's arguments filed 5/19/04 have been fully considered but they are not persuasive.

Applicants argue that the GB '219 process is a closed cycle process driven by thermal convection of different temperatures of the sources and substrate and that the GB '219 process does not occur automatically due to gravity. The claim limitation is "wherein the dissipating of the coating gas and the exposing of the inner surface of the component occur automatically by the force of gravity. The examiner maintains the position set forth previously that the process of GB '219 encompasses this claimed subject matter in that at least some automatic dissipation of the coating gas from points above the component pictured in Figure 1 of GB '219 would occur automatically due to gravity. Although other forces may be in effect, gravity is also a force affecting flow of the gas. The claim language presently does not exclude action on the coating gases by the convection forces present in the GB '219.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

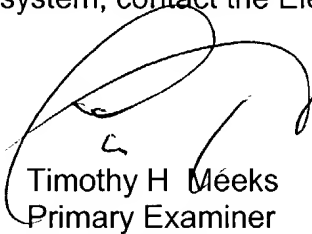
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy H Meeks whose telephone number is 571-272-1423. The examiner can normally be reached on Mon, Wed, Thur 6-6:30, Fri 6-10.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on 571-272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Timothy H. Meeks  
Primary Examiner  
Art Unit 1762

final